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Does physical fitness modify the association of low birth weight with metabolic risk?

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Low birth weight has been associated with risk of metabolic syndrome, but little is known whether physical fitness modify that association. Therefore, the purpose of this study was to examine association of birth weight with metabolic risk and how the association is influenced by fitness in Japanese. The subjects of this study were people who had participated in the research on “Exercise and Physical Activity Reference and Guide for Health Promotion” revision in three independent institutions. Physical fitness (cardiorespiratory fitness and muscular strength) and metabolic risk (waist circumference, blood pressure, triglycerides, HDL cholesterol, and fasting plasma glucose) were assessed in the research. In this study, a questionnaire was sent to 928 participants, using reply-paid envelopes and was to be returned. Subjects were asked to recall their birth weight or obtain it from their parents or mother-child notebook. The reply rate was 44 % (411/928). After excluding questionnaires that were not answered completely, the completed questionnaires of subjects were 392. We plan to send out the questionnaire to another 300 participants in National Institute of Health and Nutrition. We will then clarify the relationship between birth weight and metabolic risk and examine how the association is influenced by physical fitness.

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The imagined mind=body and contemporary health culture: Using the relationship between Thai massage and Yoga as clues

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This study aims to discuss the theory approach for analyzing cultural features of contemporary health culture. Nowadays we are always concerned with whether we are healthy or not. Sociologists call this phenomenon “health anxiety”. Social health anxieties have developed a number of body techniques for promoting health such as aromatherapy, diet therapy, jogging, massage therapy, Tai-Chi and Yoga. These were originally made to maintain health. On the other hand, some body cultures, which were not designed for health originally such as martial arts (e.g. Aikido and Karate) and dances (e.g. Hula and Belly Dance), have developed into body techniques for promoting health in recent years. One important thing that they have in common is that they emphasize mind as well as body. In other words, they emphasize subjective recognition of the internal sense, so they try to make practitioners feel health with in their minds, not only their bodies, by practicing these body techniques. Previously there were different ways of thinking about health in minds and bodies, as cases such as psychoanalysis and sport science have developed independently. So now, why do they think of “mind” and “body” as one concept? I will use the concept of “Invisibility” and address Thai Massage and Yoga as examples to consider this study.

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Adolescent's ankle joint as a lever system: It provides the triceps surae with speed advantage over adult's

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The purpose of this study was to describe the characteristics of the adolescent's foot structure as a class II lever system. A magnetic resonance imaging system was used to take a series of coronal images of the right ankle joint at 10º dorsiflexed position, anatomical position, 10º plantarflexed position. The movement of the talus relative to the tibia for the range from 10º dorsiflexion to 10º plantarflextion was expressed as the finite helical axis representing the ankle joint axis. The lever arm of the triceps surae muscle force was then determined as the shortest distance from the ankle joint axis to the line of action of the triceps surae muscle force. Adolescent boys were found to have significantly smaller lever arms (3.1 cm) than adults (4.0 cm). The between-group difference in the lever arm accounted for 23% which was greater than the difference in the lower limb length (2%). Assuming that the between-group difference in the lower-leg length corresponds with those in the limb segment lengths, the results could indicate that the structure of the adolescent's feet bear the burden of "mechanical disadvantage" to lift a load by moving the lever. On the other hand, this structure enables the lever to move through a large angular displacement and angular velocity for a given speed of force exertion. It was concluded that the adolescent's ankle joint provides the triceps surae MTU with mechanical disadvantage and speed advantage over adult's.

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A one-year longitudinal study on the fascicle length of medial gastrocnemius muscle and the Achilles tendon length in adolescent boys

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The present study aimed to examine growth-related changes in the lengths of muscle fascicle and the Achilles tendon, with relation to that in the lower leg length. Fourteen adolescent boys aged 12.6 to 13.9 yrs participated in a one-year follow-up measurement. The lower leg length, the distance between the popliteal crease and the malleolus lateralis was measured with a steel tape. Most proximal insertion of the Achilles tendon and the most distal myotendinous junction of the medial gastrocnemius were detected with the ultrasonography technique, and the distance between the two landmarks was measured as the Achilles tendon length. The muscle fascicle length was measured from a longitudinal ultrasound image taken at 30 % of the lower leg length. For each subject, the measurements were take in two occasions (Pre and Post) separated by one year. The lower leg length significantly increased (Pre: 365.7 ± 19.2 mm, Post: 383.6 ± 17.4 mm). However, there were no significant changes in the Achilles tendon length (Pre: 176.0 ± 20.8 mm, Post: 179.6 ± 20.6 mm) and the muscle fascicle length (Pre: 57.7 ± 7.5 mm, Post: 56.4 ± 9.1 mm). These results suggest that the growth rates of the muscle fascicle length and the Achilles tendon length during adolescent are not proportional to that of the lower leg length.

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Patterns of physical activity among Japanese junior high school students

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Background. Physical activity (PA) is well-documented to be good for physical and mental health among adolescents. Previous studies showed that the recommended levels of PA for youth have been established. However, few of them examined the patterns of their PA. Understanding the pattern of PA would aid the design of more effective interventions to help adolescents meet the recommendations. Objective. The present study will investigate the patterns of PA among Japanese junior high school students, and identify the prevalence of patterns among them. Methods. The participants will be comprised of 800 junior high school students aged 12-15 years old, recruiting from one randomly sampled city, Okayama prefecture, in Japan. Self-reported questionnaire includes 7 questions to examine total PA after school, PA time spent separately inside and outside of school sports facilities after school, PA at lunchtime recess, PA at home, extracurricular sports activity (weekdays and weekends) and the demographic attributes (gender, age, grade, weight, height, and BMI). To describe the variance of PA patterns, descriptive statistics will be used. Moreover, the t-test and ANOVA will be conducted separately to compare the variance of patterns by genders and grades.

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The strategy aimed at promoting women's physical education in Japan: Focus on beauty values in prewar era

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In prewar era, physical education conflicted with the traditional values of women in Japan. For successful 'modernization' of Japan, it was necessary to build physical education into a national people's movement. They knew that Japan, to endure, would have to change for the good that nation with a weak constitution. Until then, typical beauty in Japan was the woman with a sickly face, who has a ladylike attitude. This part had to be more 'westernized' than the rest for advocates in Japan. Advocates fended it necessary to negotiate compromises with its own values. They tried to modify an existing value about beauty of women for succeed in 'modernizing' of Japan. Therefore, it was added the notion of "healthy" to Japanese beauty image. 'Healthy beauty' was gradually recognized as a new value of women by proactive stance in resolving issue. Their biggest obstacle in doing so would have been the existing views of women, and they would have required edification activities as well as theoretical research. An attempt to combine 'health' and 'beauty' was important as the strategy aimed at promoting women's physical education in Japan.

Sleep deprivation influences exercise tolerance and stress systems

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The purpose of this study was to investigate the effects of sleep deprivation on exercise tolerance and stress systems. Here we report additional findings with saliva and blood analysesfrom our ongoing study.Ten young males completed two, 2-day trials (i.e. control and sleep deprivation trials) separated by more than five days each. For the control trial, participants were allowed normal sleep from 23:00 to 7:00; for the sleep deprivation trial, they did not sleep for 34 hours. On both trials, saliva samples were collected by using Salivettes at 9:00, 13:00 and 16:00 before eachmeal on both days to determine salivary α-amylase andchromogranin A (CgA) concentrations. In addition, venous blood samples were collected after saliva sampling and immediately after exercise stress test to determineplasma adrenaline, noradrenaline, adrenocorticotropic hormone (ACTH) and cortisol concentrations.Exercise tolerance testing was performed on a treadmill until exhaustion by ramp protocol at 17:00 on day 2. Oxygen uptake and heart rate were measured at rest and during exercise.The area under the curve (9:00-16:00) value of salivary CgA and ACTH concentrations at 9:00 and 13:00weresignificantly higher in the sleep deprivation trial than the sleep trialon day 2.Moreover, exercising heart rate was significantlydecreased by sleep deprivation. These results suggest that sleep deprivation alters exercise tolerance and stress systems.

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Estimation of lean body mass in children using a three-dimensional photonic image scanning technique

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INTRODUCTION: The lean body mass (LBM) is an extensively used index of body composition. The underwater weighing and air displacement techniques have been widely used to estimate LBM. These techniques require well-trained laboratory staff and considerable effort of the subjects that preclude easy application to the field measurement, especially for children. The three-dimensional photonic image scanning (3DPS) is a recently developed technique to measure the body volume. The purpose of this study was to estimate LBM in children based on 3DPS and to compare it with Dual-energy x-ray absorptiometry (DXA) -based LBM. METHODS: Thirty-two children aged 11~15 yr participated in this study. During the scanning process of 3DPS, the subject took a standing position and remained motionless while holding breath after expiration. The body volume was corrected for the residual lung volume that was determined by the rebreathing method, and used to determine the body density. Using the body density as the input, LBM was calculated with the Lohman (1989) equation. The LBM was also determined from the amount of x-ray transmission through the body. RESULTS: No difference was found in the mean values of LBM between 3DPS and DXA (3DPS: 38.7 ± 7.2 kg, DXA: 37.7 ± 6.8 kg, n.s.). There was no systematic error between the two techniques (r=-0.34, n.s.). CONCLUSION: Results suggest 3DPS is potentially useful in estimating LBM of children.

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Baseball and civilization
- A study on Noko baseball team during the Japanese ruling period –

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The main purpose of this research is to find how Governor-General of Taiwan implemented Aborigine's Policy to aborigines by way of baseball. In early period of Japanese governing, Taiwanese aborigines were regarded as a savage and uncivilized group. However, the negative stereotype on Taiwanese aborigines started to change after the special civilized-group "Noko baseball team" went fighting in west Taiwan and visited Japan. Conclusions are as follows:

1. Eguchi promoted Aborigine's Policy for long time and modified the image of Taiwanese aborigines from negative to positive.
2. While competing with Japanese team in Taiwan and Japan, Noko baseball team made audiences feel that Taiwanese aborigines were gradually civilized.

Noko baseball team seemed like a moving showcase for the success of Aborigine's Policy. In competitions, they displayed Japanese manner like politeness and humbleness which they had learned from the School of Agriculture in Hualien Harbor.

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The formation of “Konjo Theory” in sports: To reconsider characteristics of sports in postwar Japan

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The purpose of this study was to clarify how and when “Konjo theory in sports” was approved and took hold in society by paying attention to word “Konjo”. Concretely, the following questions have been raised: 1) How was the concept of “Konjo” formed and transformed? 2) What is the role that sports played to established of “Konjo”? In this study, we focused on discourse related “Konjo”.

The meaning of “Konjo” was converted from “a fundamental character and idea that a person was born” in a negative context to “It was a strong, difficult character not to depress” and “Strong energy that started accomplishing something” in an affirmative context, starting with The Tokyo Olympic Games. From this analysis, we can say: By “Konjo” as “Inherent human nature” having been diverted to sports, we came to think that we were able to train “Konjo” for acquisition. We thought that the athlete’s activity in the Tokyo Olympics was able to prove this inherent nature among humans, and this was a role that sports had played. Based on the above facts, we can assume that the Tokyo Olympics became an important turning point in the process of formation of “the attitude to sports” in the postwar period of Japan.